Name: ..... **Class:** .....

Task 1

1. The following is a list of advantages and disadvantages of the star and mesh network topologies.

Advantage	Disadvantage	Applies to which topology?
No single point of failure		
Fast data transfer as there are fewer collisions		
Network management can be done centrally		
A signal does not need to be transmitted to all computers in the network		
A node or device failure will not affect the rest of the network		
	Network administration can be difficult	
	Additional hardware required	
	Can involve redundant connections	
	Expensive to install using cabled connections	

2. What role does a router play in a network?

3. A small charity subsidiary is considering whether they should network the six existing standalone computers at their office premises. They wish to keep the costs to a minimum. They would like access to the Internet from all the computers, and they also want to be able to access a colour printer and a scanner from any of the computers.

   Advise them

   - whether they should network their computers, and what the advantages and disadvantages would be
   - what topology you would recommend, and why
   - what extra hardware they would need to purchase
   - whether a part-time member of staff who often brings in a laptop, would be able to access the Internet from her laptop while at the office, as she is not currently able to do so.

Advantages	Disadvantages

Task 2

A new office is to be set up for a company with five employees.

Each employee will need their own desktop computer. In addition, they will need to be able to bring and connect a company laptops and smartphones to the network.

There will be one Internet connection which will be shared between all employees.

A file server, backup server and two printers will also be required.

(a) What type of topology would be used for connecting the computers to the network?

(b) Explain why the company has set up a LAN rather than a WAN.

(c) Draw a diagram showing the topology of the company's network. Add labels where appropriate.

(d) Add labels to the connections in your network drawing to explain what type of transmission media you would advise using. Justify your choices below.